

REMARKS

This answer is in response to the Non-Final Office Action dated 07/14/2008. Claims 1-28 were rejected in this Non-Final Office Action. By this Amendment, Claims 1, 3-6, 11-16, and 19 are amended, and no new claims are added.

II. Claim Rejections - 35 U.S.C. §103

The Examiner has rejected Claims 1-4, 11, 13, 14, 16 -18, 24, and 25 under 35 U.S.C. 103(a) as being unpatentable over Tsukune, et al. (European Patent Application 0 387 656 A1, hereafter Tsukune) in view of Ravi (United States Patent 5,952,060), Taylor, et al. (United States Patent 5,882,424, hereafter Taylor), Maydan, et al. (United States Patent 6,109,206, hereafter Maydan) and Reiss, et al. (United States Patent Application Publication US 2003/0014145 A1, hereafter Reiss), and Satoh et al. (United States Patent Application Publication US 20020011210 A1, hereinafter Satoh)..

The Applicant traverses the rejection of Claims 1-4, 11, 13, 14, 16 -18, 24, and 25 under 35 U.S.C. 103(a) because the Applicant believes that the Examiner is using “hindsight reasoning” based on the elements of the Applicant’s claimed invention. The Examiner alleges that the RF sources in the different sited references can be combined as required by the Examiner to reject the various elements in the Applicant’s claimed invention. Those skilled in the art would recognize that each of the cited references uses specific RF configurations for specific purpose and that the combinations suggested by the Examiner would not be obvious to those skilled in the art. In addition, there is no motivation in Tsukune to use multiple RF sources or to use inductively coupled sources as taught by the sited references.

The Examiner admits that Tsukune is deficient in several ways and attempts to use the other reference whenever it is convenient to reject the elements of the claimed invention.

Claim 1 as amended is directed to:

A method for operating a plasma enhanced chemical vapor deposition (PECVD) system to improve wafer to wafer film thickness uniformity, the method comprising:

performing a chamber seasoning process comprising a chamber cleaning process and a chamber pre-coating process, wherein the chamber cleaning process uses a remote plasma device, a first RF source, and a second RF source to form a plasma in a

processing chamber with a first fluorine-containing gas, a first oxygen-containing gas, or ~~an~~ a first inert gas, or a combination of two or more thereof, and wherein the chamber pre-coating process uses a silicon-containing precursor, a carbon containing precursor, or ~~an~~ a second inert gas, or a combination of two or more thereof, wherein the remote plasma device is coupled to the processing chamber using a valve, wherein the silicon-containing precursor comprises trimethylsilane (3MS), a 3MS flow rate varying from approximately 50 sccm to approximately 300 sccm, the second inert gas comprises Helium (He) a He flow rate varying from approximately 1000 sccm to approximately 2000 sccm, the first RF source power varying from approximately 600 W to approximately 1000 W, wherein a chamber pressure varies from approximately 4 Torr to approximately 10 Torr, and the PECVD system comprising an upper electrode and a translatable substrate holder, a first gap being established between the upper electrode and the translatable substrate holder during the chamber cleaning process, wherein the first gap varies from approximately 5 mm to approximately 50 mm;

positioning a substrate on a substrate holder in the processing chamber;
depositing a film on the substrate, wherein a processing gas comprising a precursor is provided to the processing chamber during the deposition process; ~~and~~
removing the substrate from the processing chamber; and
measuring the film on the substrate using an integrated metrology module configured to measure wafer film thickness.

The Applicant has amended Claim 1 to more clearly recite the invention and the Applicant believes that the amended Claim 1 is patentable over Tsukune in view of Ravi, Taylor, Maydan, Reiss, and Satoh. The Applicant asserts that the *Tsukune, Ravi, Taylor, Maydan, Reiss, and Satoh* references fail to teach all claim limitations of amended claim 1, and because *Tsukune, Ravi, Taylor, Maydan, Reiss, and Satoh* fail to teach all claim limitations of amended claim 1, a prima facie case of obviousness has not been established for independent claim 1 and dependent claims 2-4, 11, 13, 14, 16 -18, 24, and 25.

The Examiner has rejected Claims 8, 9, and 28 under 35 U.S.C. 103(a) as being unpatentable over Tsukune in view of Ravi, Taylor, Maydan, Reiss, Satoh, and further in view of Mahorowala et al. ("Tunable Anti-Reflective Coatings with Built-In Hard Mask Properties Facilitating Thin Resist Processing," Proceedings of SPIE (4343) : 306-3 16,200 1, hereafter

Mahorowala). The Applicant asserts that the *Tsukune, Ravi, Taylor, Maydan, Reiss, Satoh, and Mahorowala* references fail to teach all claim limitations of amended claim 1. Because *Tsukune, Ravi, Taylor, Maydan, Reiss, Satoh, and Mahorowala* fail to teach all claim limitations of amended claim 1, a prima facie case of obviousness has not been established for independent claim 1 and dependent claims 8, 9, and 28.

The Examiner has rejected Claims 5-7, 10, 12, and 15 under 35 U.S.C. 103(a) as being unpatentable over *Tsukune* in view of *Ravi, Taylor, Maydan, Reiss, and Satoh* and further in view of *Hashizume, et al.* (US 6,410,102, hereafter *Hashizume*). The Applicant asserts that the *Tsukune, Ravi, Taylor, Maydan, Reiss, Satoh, and Hashizume* references fail to teach all claim limitations of amended claim 1. Because *Tsukune, Ravi, Taylor, Maydan, Reiss and Hashizume* fail to teach all claim limitations of amended claim 1, a prima facie case of obviousness has not been established for independent claim 1 and dependent Claims 5-7, 10, 12, and 15.

The Examiner has rejected Claims 19-21 under 35 U.S.C. 103(a) as being unpatentable over *Tsukune* in view of *Ravi, Taylor, Maydan, Reiss, and Satoh* and further in view of *Law, et al.* (US 4,960,488, hereafter *Law*). The Applicant asserts that the *Tsukune, Ravi, Taylor, Maydan, Reiss, Satoh, and Law* references fail to teach all claim limitations of amended claim 1. Because *Tsukune, Ravi, Taylor, Maydan, Reiss, Satoh, and Law* fail to teach all claim limitations of amended claim 1, a prima facie case of obviousness has not been established for independent claim 1 and dependent Claims 19-21.

The Examiner has rejected Claims 22, 23, and 27 under 35 U.S.C. 103(a) as being unpatentable over *Tsukune* in view of *Ravi, Taylor, Maydan, Reiss, and Satoh*, and further in view of *Kuwada, et al.* (US 200210029748A1, hereafter *Kuwada*). The Applicant asserts that the *Tsukune, Ravi, Taylor, Maydan, Reiss, Satoh, and Kuwada* references fail to teach all claim limitations of amended claim 1. Because *Tsukune, Ravi, Taylor, Maydan, Reiss, Satoh, and Kuwada* fail to teach all claim limitations of amended claim 1, a prima facie case of obviousness has not been established for independent claim 1 and dependent Claims 22, 23, and 27.

The Examiner has rejected Claims 26 under 35 U.S.C. 103(a) as being unpatentable over *Tsukune* in view of *Ravi, Taylor, Maydan, Reiss, and Satoh*, and further in view of *Steger, et al* (United States Patent 5,788,799, hereafter *Steger*). The Applicant asserts that the *Tsukune, Ravi, Taylor, Maydan, Reiss, Satoh, and Steger* references fail to teach all claim limitations of amended claim 1. Because *Tsukune, Ravi, Taylor, Maydan, Reiss, Satoh, and Steger* fail to

teach all claim limitations of amended claim 1, a prima facie case of obviousness has not been established for independent claim 1 and dependent Claims 26.

In addition, the Applicant has amended Claims 3-6, 11-16, and 19 to more clearly recite the invention and the Applicant believes that amended Claims 3-6, 11-16, and 19 are patentable over the cited art.

Given the above remarks, independent claim 1 is now in condition for allowance. The dependent claims 2-28 are similarly in condition for allowance as they incorporate limitations from independent claim 1. In light of the comments above, the Applicant respectfully requests the allowance of the claims 1-28.

If the undersigned agent has overlooked a teaching in any of the cited references that is relevant to the Allowability of the claims, the Examiner is requested to specifically point out where such teaching may be found. Further, if there are any informalities or questions that can be addressed via telephone, the Examiner is encouraged to contact the undersigned agent at 480-539-2105 or by email at jim.klekotka@us.tel.com.

Charge Deposit Account

Please charge our Deposit Account No. 50-3451 for any additional fee(s) that may be due in this matter, and please credit the same deposit account for any overpayment.

Respectfully submitted,

/James Klekotka/

Date: 10/20/2008

James Klekotka

Agent for Applicant

Registration No. 44839

TOKYO ELECTRON U.S. HOLDINGS, INC.
4350 W. Chandler Blvd., Suite 10
Chandler, AZ 85226
Tel. 480-539-2105
Fax. 480-539-2100